

INCH-POUND

MIL-C-17/1978  
20 February 1991  
SUPERSEDING  
MIL-C-17/197A(EC)  
10 August 1987

MILITARY SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL,  
50 OHMS, M17/197-00001

This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist  
of this specification sheet and the issue of the following specification  
listed in that issue of the Department of Defense Index of Specifications  
and Standards (DODISS) specified in the solicitation: MIL-C-17.

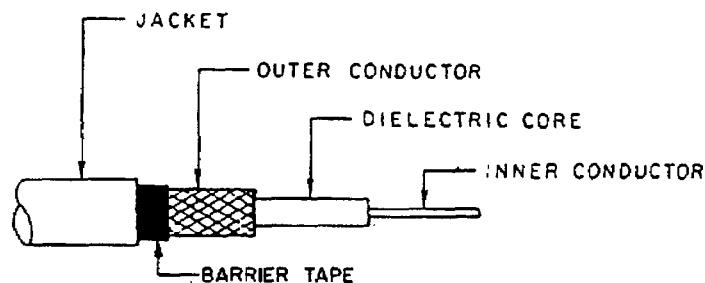


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details		
Inner conductor	Nineteen strands of tinned copper wire, each strand .0072 inch each diameter. Overall diameter: .0355 inch $\pm$ .0020.		
Dielectric cores:	Type A-1: Solid polyethylene. Diameter: .116 inch $\pm$ .004.		
Outer conductor:	Single braid of AWG No. 36, tinned copper wire. Diameter: .145 inch maximum.		
		<u>Alternate</u>	
	Coverage:	92.8% nominal	94.2% nominal
	Carriers:	12	16
	Ends:	9	7
	Picks/inch:	7.7 $\pm$ 10%	10.3 $\pm$ 10%

Caution is directed to the application of this cable above 400 MHz. Attenuation  
tested only at 400 MHz. SRL and power handling capabilities are not stipulated  
herein.

TABLE I. Description - Continued.

Components	Construction details
Barrier tape	A .001 inch thick polyester tape faced with a .002 inch thick layer of aluminum. The tape will be applied with a 50% lap, aluminum face toward the outer conductor. Diameter: .155 inch maximum.
Jacket	Cross-linked polyolefin Diameter: .195 inch $\pm$ .004.

## ENGINEERING INFORMATION:

Continuous working voltage: 1,400 V rms, maximum.

Velocity of propagation: 65.9 percent, nominal.

Operating temperature range: -30°C to +85°C.

Inner conductor properties:

DC resistance (maximum at +20°C): 1.240 ohms per 100 feet.

Elongation: 10 percent, minimum..

Tensile strength: Not applicable.

Engineering notes: This cable is useful in general purpose low temperature applications. (See connector series "TNC", "BNC", and "SMA" in accordance with MIL-C-39012.) These cables were redesigned to meet the vertical flame test.

## REQUIREMENTS:

Dimensions, configuration, and descriptions: See figure 1 and table I.

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Not applicable.

Eccentricity: 10 percent, maximum.

Adhesion of conductors:

Inner conductor to core: 5 pounds, minimum; 15 pounds, maximum.

Aging stability: +98°C  $\pm$ 2°C.

Cold bend: -30°C  $\pm$ 2°C.

Stress crack resistance: Not applicable.

Outer conductor integrity: Not applicable.

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Dimensional stability: +85°C ±2°C.

Inner conductor from core: .062 inch, maximum.

Inner conductor from jacket: .125 inch, maximum.

Contamination: Not applicable.

Bendability: Not applicable.

Flammability: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2.0 percent, maximum.

Halogen content: 0.2 percent, maximum.

Immersion test:

Tensile strength, percent of unaged minimum: 50

Elongation, percent of unaged minimum: 50

Smoke index: 25 maximum.

Toxicity index: 5 maximum.

Durometer hardness: (Type A) 80 minimum.

Weathering: Applicable.

Abrasion resistance: 75 cycles minimum (jacket only).

Tear strength: 35 pounds per inch minimum.

Heat distortion: 30 percent maximum distortion.

Physical tests on unaged jacket:

Tensile strength: 1,300 psi, minimum.

Elongation, 160 percent, minimum.

Physical tests on aged jacket:

Air oven:

Tensile strength, percent minimum: 60

Elongation, percent minimum: 60

Hot oil immersion:

Tensile strength, percent minimum: 50

Elongation, percent minimum: 50

Tensile strength and elongation: 1,300 psi, 160 percent minimum.

Weight: 3.1 pounds per 100 feet maximum.

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Electrical:

Continuity: Applicable.

Spark test: 5,000 V rms, minimum.

Voltage withstanding: 5,000 V rms, minimum.

Insulation resistance: Not applicable.

Corona extinction voltage: 1,900 V rms minimum.

Characteristic impedance: 50  $\pm$ 2 ohms.

Attenuation: 17.0 dB per 100 feet maximum at 400 MHz.

Structural return loss: Not applicable.

Capacitance: 32.2 pF per foot, maximum.

Capacitance stability: Not applicable.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Phase stability: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Part or Identifying Number (PIN): M17/197-00001.

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:

Army - CR

Navy - EC

Air Force - 85

Review activities:

Army - AR, MI

Navy - SH

Air Force - 11, 80, 99

DLA - ES, IS

User activities:

Army - AT, ME

Navy - AS, MC, OS

Air Force - 19

Preparing activity:

Navy - EC

Agent:

DLA - ES

(Project 6145-1176-18)